

Panasonic

BUSINESS

HD Visual Communications System

KX-VC2000
KX-VC1600
KX-VC1300
KX-VC1000



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HD Visual Communications System: <https://panasonic.net/cns/psn/products/hdvc/>

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*This image shows the KX-VC2000

Connects multiple sites to allow for flexible, stress-free videoconferences for all participants.

The new HD Visual Communications (HDVC*) System connects to multiple sites for videoconferences with minimum initial costs. You can also use a mobile device to take part in a videoconference from a location away from your company. The HDVC System realizes effective visual communication without restrictions on time or place. It flexibly responds to a wide range of communication needs in various fields, such as education, manufacturing, healthcare, finance and sales.

* HD Visual Communications System is abbreviated as HDVC hereafter.

KX-VC2000

* Remote controller included.
* HD Communication Camera, Omnidirectional Boundary Microphone and HDMI cable sold separately.



Full-HD 1080/60p	AV-QoS Control	Wideband Stereo Full Duplex Audio	Multi Device
Triple Monitor	Dual Camera (Sub Camera)	PC Contents Sharing	Dual Network
USB Recording	USB Device Mode	Web Hybrid Mode	Multicast *2

*1 An activation key [KX-VCS305] is required. [Refer to "Activation Key" on page 17.]
*2 An activation key [KX-VCS302] is required. [Refer to "Activation Key" on page 17.]

KX-VC1600

* Remote controller included.
* HD Communication Camera, Omnidirectional Boundary Microphone and HDMI cable sold separately.



Full-HD 1080/60p	AV-QoS Control	Wideband Stereo Full Duplex Audio	Multi Device
Triple Monitor	Dual Camera (Sub Camera)	PC Contents Sharing	Dual Network
USB Recording	USB Device Mode	Web Hybrid Mode	Multicast *2

*1 An activation key [KX-VCS304] is required. [Refer to "Activation Key" on page 17.]
*2 An activation key [KX-VCS302] is required. [Refer to "Activation Key" on page 17.]

KX-VC1300

* Remote controller included.
* HD Communication Camera, Omnidirectional Boundary Microphone and HDMI cable sold separately.



Full-HD 1080/60p	AV-QoS Control	Wideband Stereo Full Duplex Audio	Multi Device
Dual Monitor	Dual Camera (Sub Camera)	PC Contents Sharing	
USB Recording	USB Device Mode	Web Hybrid Mode	Multicast *1

*1 An activation key [KX-VCS302] is required. [Refer to "Activation Key" on page 17.]

KX-VC1000

* Remote controller included.
* HD Communication Camera, Omnidirectional Boundary Microphone and HDMI cable sold separately.



Full-HD 1080/60p	AV-QoS Control	Wideband Stereo Full Duplex Audio	Multi Device
Dual Monitor *2	Dual Camera (Sub Camera)	PC Contents Sharing	
USB Recording	USB Device Mode	Web Hybrid Mode	Multicast *3

*1 An activation key [KX-VCS314] is required. [Refer to "Activation Key" on page 17.]
*2 An activation key [KX-VCS402] is required.
*3 An activation key [KX-VCS302] is required. [Refer to "Activation Key" on page 17.]

[Feature 1] Connection to Multiple Sites



The HDVC System can connect a lot of sites without any optional equipment. It can connect via intranet or Internet, thus enabling multi-site videoconferencing with a client or with people in distant locations via mobile devices.

- 24-site Connection p.4
- Multi Device Applicability p.5
- Cascade Mode Application p.6
- NAT Traversal Service p.7
- HD Visual Communication Mobile p.7

Product Line-up p.14

[Feature 2] Clear Communication



The HDVC System incorporates Panasonic's high-quality image and sound technologies cultivated in the development of various AV products over the years. The system conveys facial expressions and nuances of voices to facilitate discussions and remote lectures.

- Full-HD 1080/60p p.8
- Wideband Stereo Full Duplex Audio p.8
- AV-QoS Control p.9

Options p.16

[Feature 3] Easy to Use / Manage



The Triple Monitor function displays a PC document and the images of distant sites and the home location on three monitors. The sub camera function displays fine details in a close-up view. Various convenient functions help to make communication smooth and accurate.

- Triple Monitor p.10
- Camera Control p.11
- Web Console p.11
- Web Hybrid Mode **NEW** p.12
- USB Recording p.13
- Contact List Transfer p.13

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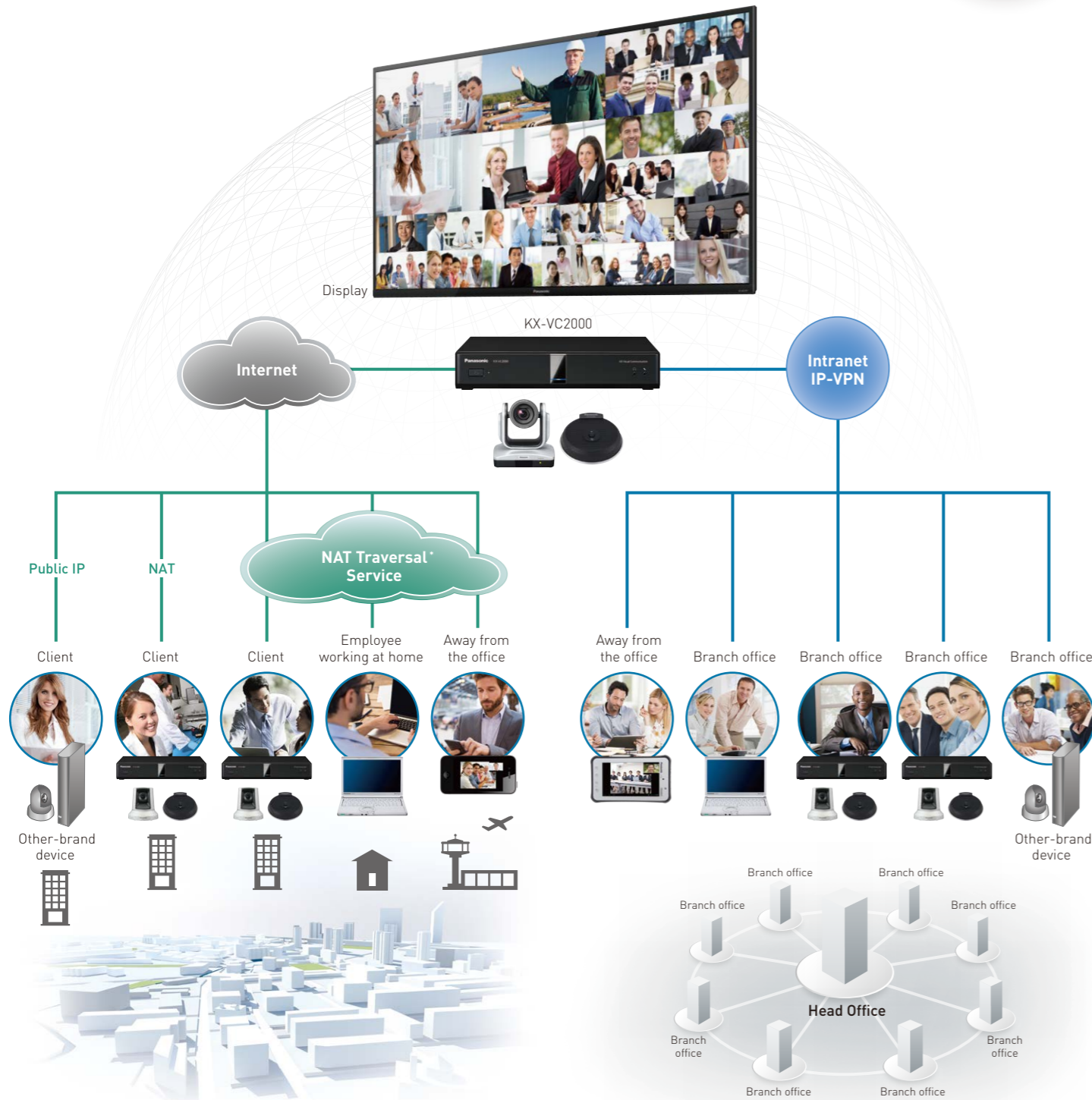
Connection to Multiple Sites

24-Site Connection (KX-VC2000)

Multi-site videoconference with people at up to 24 locations*1

The HDVC System lets you hold a multi-site videoconference with people at up to 24 sites*1 without requiring the purchase of expensive MCUs (Multi-point Connection Units). When combined with Panasonic's NAT Traversal Service or HD Visual Communication Mobile application, which enables the use of mobile devices for participating in a videoconference, you can have effective visual communication without restrictions on time or place.

*1 An activation key (KX-VCS305) must be purchased. (Refer to "Activation Key" on page 17.)



Multi Device Applicability

Participation in videoconferences using mobile devices

You can join a videoconference from a location outside of the office, while you are on the go, or from your home using a Windows/iOS/Android™ mobile device. The HDVC System provides effective visual communication without restrictions on time or place.



How to get HDVC Mobile

HDVC Mobile is required for participating in a videoconference using an iOS/Android™ mobile device or Windows PC. HDVC Mobile can be downloaded from the following URL.
https://panasonic.net/cns/psn/products/hdvc/product/mobile_android/index.html

* An Activation Key is required to use the software. For details, see page 17.

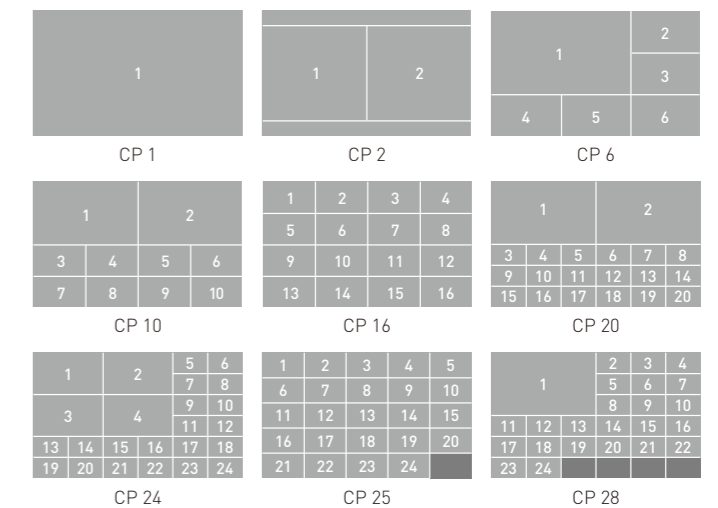
Screen Layout

Select layout suitable with videoconference types

The HDVC System comes with a function that lets you choose a screen layout from a variety of options. For instance, you can select a screen layout to show all participating sites or to display the site with a high voice level in a large window (CP 1 in the layouts shown on the right.). The most suitable screen layout can be selected according to the type of videoconference held. The screen layout changes automatically according to the number of connection sites. Or you can choose from CP1, CP2, CP4, CP6, CP8, CP9, CP10, CP13, CP15, CP16, CP20, CP21, CP24, CP25, or CP28.

* For Discussion mode, designated sites can be displayed at the preset screen positions.

Layout example



Main display switching

The main display position can be pre-set based on conference operation method. Main display can be easily switched with number buttons on the remote controller.

Fixed main display position



Set the designated site as the main display.

Voice activation 1



Automatically allocate the loudest site to the main display.

Voice activation 2



The local site is set to the main display, and automatically allocate the loudest site next to the main display.

Fixed desired display positions



All display position can be flexibly pre-assigned.

Connection to Multiple Sites

Cascade Mode Application (KX-VC2000)

Increase the number of attendees without expanding the existing facilities

The newly added KX-VC2000 Cascade mode application makes it possible to expand partial videoconference groups under a particular videoconference unit without adding or expanding the existing central server or central network infrastructure. This allows a group representative to join the central videoconference meeting and share it with all attendees in the partial group.

Utilizing the KX-VC2000 as a hub between central and partial groups, it is also possible to deploy a separate network in the partial group. This eliminates concentrated access to a particular network or server and achieves distributed access.

In addition, with the new Cascade mode, it becomes possible to configure more than 24 sites of the HDVC videoconference system without an external server or MCU. This Cascade mode application is beneficial for relatively large organizations, such as governmental organizations or large group companies, who frequently hold group representative conferences and distribute it to all attendees.

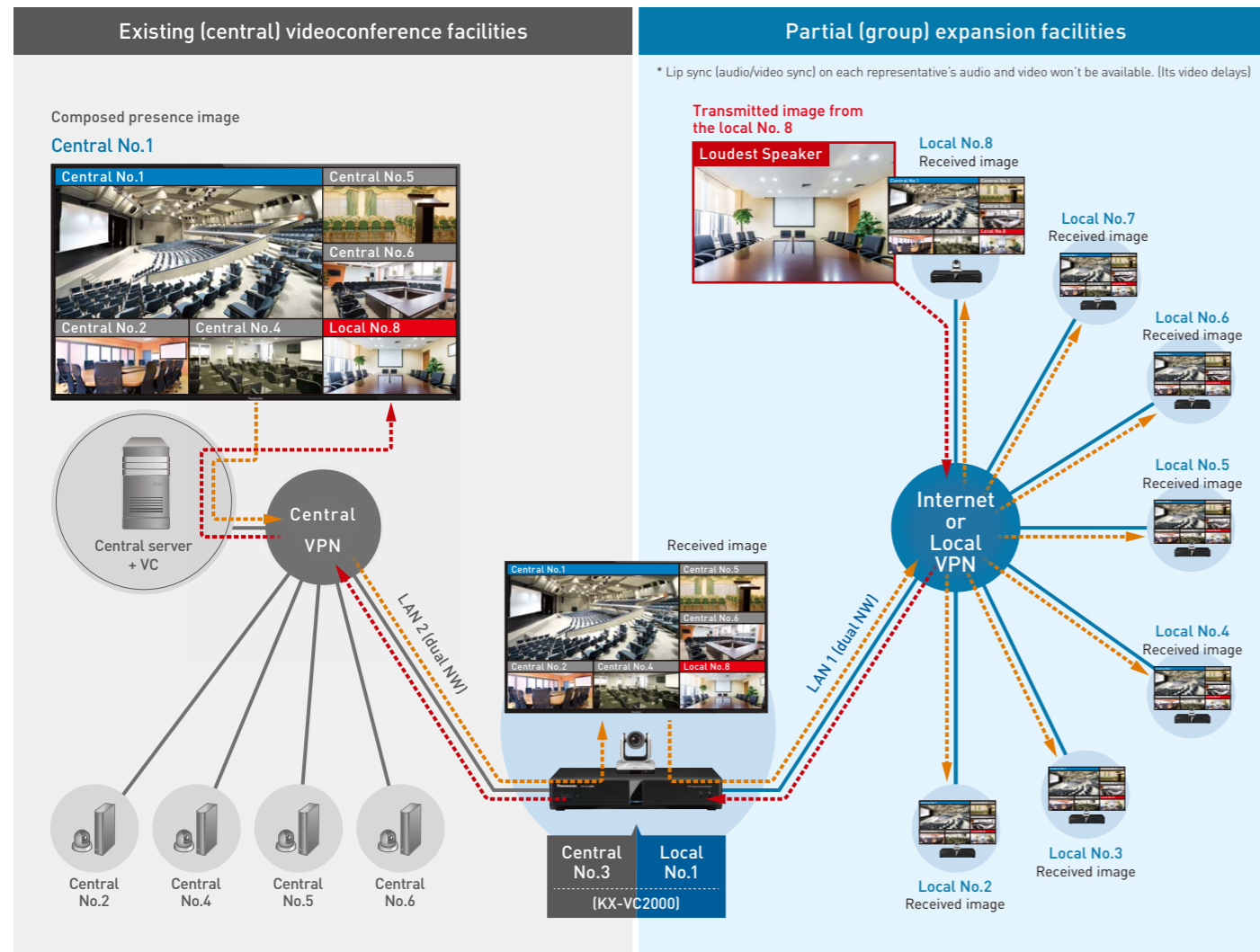
This is also useful for large-scale remote learning or training facilities, such as educational institutes or service oriented companies.

This application also helps to reduce additional investments in the central server and network operation costs.

Application Example

By introducing the KX-VC2000 Cascade mode at Central Group No. 3, you can expand HDVC attendees partially in the No. 3 group without expanding the central server or central network.

The KX-VC2000 automatically selects the loudest speaker of the group as a representative presenter (local No. 8 image in the figure below), and transmits his/her voice and image to the central facility, while receiving the central server composed presence image and distributing it to all of the partial group attendees.



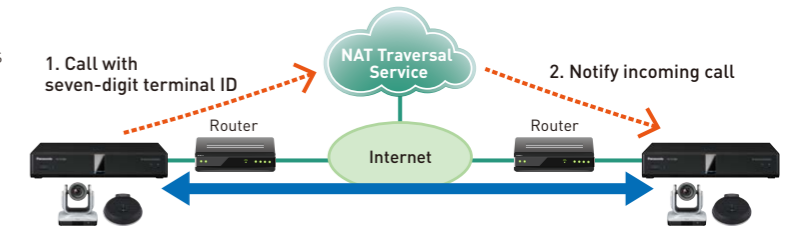
* Screen layout depends on Central No.1.

NAT Traversal Service

Network service for connecting your company to other sites

NAT Traversal Service lets you connect to another party with a seven-digit terminal ID even when the other party's IP address has changed by using a network with a dynamic IP address.

For details, please refer to the following web site.
https://panasonic.net/cns/psn/products/hdvc/nat/nat_traversal/index.html



HD Visual Communication Mobile

Mobile application for joining remote videoconference

Use of HDVC Mobile, an application developed exclusively for the HDVC System, lets you take part in a videoconference from a business trip destination using a tablet, smartphone or PC. Dual Stream reception is also supported, and the screen can display an easy-to-see image of documents.



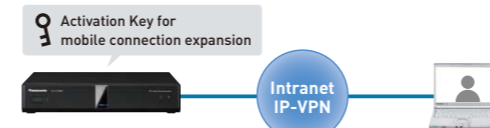
Variation of Mobile application's access

The HDVC Mobile System requires the "HD Visual Communication Mobile" application to be installed in a mobile device, and an Activation Key (available for a fee). You can select from two methods combining the number of HDVC Mobile devices and connection methods.

Intranet/IP-VPN

Registering the Activation Key in the HDVC System (for IP mode)

This is suitable when there are many mobile devices.



Internet/NAT Traversal

Registering the Activation Key in the HDVC System and mobile device (for NAT Traversal mode)

This is suitable when connecting from outside the office (when on the road, from home, etc.)



* See details of "Activation Key" on page 17.

Device (As of September 2019)

HDVC Mobile for Windows

CPU	CPU: Core i5 (4 threads) or faster. Memory: 2GB or over
OS*	Windows 7 / Windows 8 / Windows 8.1 / Windows 10
Display Resolution	1366 x 768 or over
Peripheral devices	Camera*2
	Logicool (Logitech): C920t
	Logicool (Logitech): BCC950 ConferenceCam
	Microsoft: LifeCam Studio / Cinema
Headset*3	Logicool: USB Headset H340, ELECOM: HS-EP02USV
Speaker / Microphone	Panasonic: KX-NT700N, NTT-AT: R-TALK 800PC, YAMAHA: PJP-20UR

*1 Windows 8: Modern UI is not supported. Windows 10: Tablet mode is not supported.
*2 720p supported *3 USB type

HDVC Mobile for iOS

CPU	Apple A5 or over
OS	iOS 7.0 - 11.4, iPhone, iPad, iPad mini are available. iPod touch is unavailable.

HDVC Mobile for Android

CPU	Cortex-A9 or over NEON supported
OS	Android 7.0 -

Please check the HDVC Mobile website for the latest information.
https://panasonic.net/cns/psn/products/hdvc/product/mobile_android/index.html

- For communication using a provider service, the communication speed may be limited by the packet amount. For details, please contact your provider.
- For communications using a provider service, the packet transmission amount may increase due to sending motion images. Be sure to check the contract with your provider.
- Communication may not be possible, or the quality may drop due to the provider's network specifications. Try a free, trial 3-month Activation Key in advance.
- The 3G bandwidth may be insufficient for HDVC Mobile, making it unusable.
- HDVC Mobile communication may not be possible due to the device features. Communication may also not be possible due to tethering.
- Use of HDVC Mobile requires a bandwidth of 256 kbps or higher [video: QVGA (Android™)/W432p (Windows), audio: G.722 monaural] for the transmission/reception of video and audio data.

Clear Communication

Full-HD 1080/60p

Conveys even facial expressions and gestures

The HDVC System delivers high-resolution Full-HD 1080/60p images. Displayed images are as clear as Full-HD display images and allow for effective visual communication. The HDVC System shows even small changes in facial expressions for high-quality communication. HD images can be displayed with a bandwidth of 256 kbps or higher.*1 *2

*1 A device setting change is required. *2 The frame rate depends on the network environment.

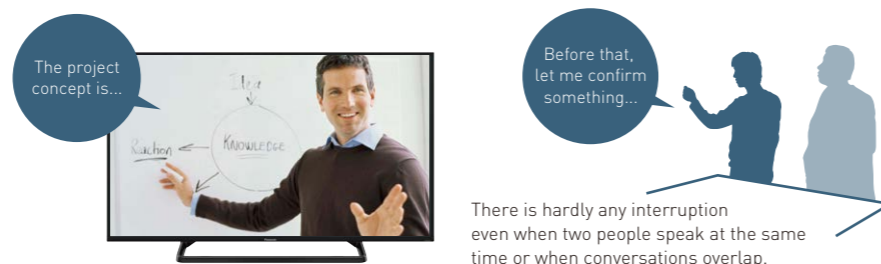


Even changes in facial expressions can be seen clearly, and gestures, actions and quick motions appear smoothly.

Wideband Stereo Full Duplex Audio

Easy to hear even when two people talk simultaneously

Full-duplex audio in wideband stereo allows high-quality sound to fill the room with clarity. A unique Echo Canceller prevents echoes and howling, and there are hardly any delays or interruptions even when two people speak at the same time. You can enjoy smooth, natural conversations as if you were all in the same room.

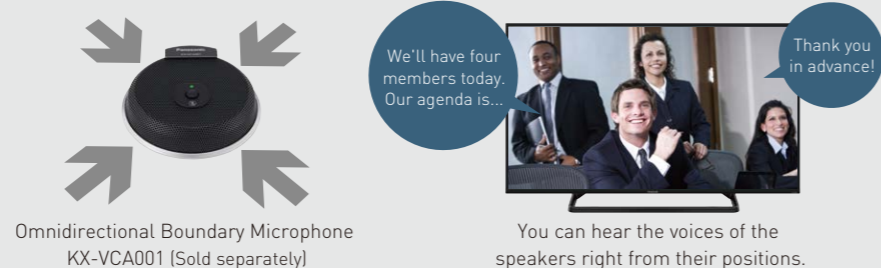


There is hardly any interruption even when two people speak at the same time or when conversations overlap.

High-quality Omnidirectional Boundary Microphone

(Supported by the KX-VC2000 / KX-VC1600 / KX-VC1300)

The HDVC System has four compact built-in microphones. A direction recognition function reflects the direction and position of the speaker's voice to the listener's side speakers.



You can hear the voices of the speakers right from their positions.

AV-QoS Control

Stress-free conference

Packet losses for the HDVC System and HDVC Mobile are prevented by the rate control (AV-QoS), and lost packets are restored by the combined use of the forward error correction and automatic repeat request control. Even if the bandwidth decreases after communication starts, clear communication is maintained according to the communication line condition. Up to 256 kbps of images and sounds can be transmitted per site. Connection without disrupting the image or interrupting the sound is possible even with a low bandwidth.

AV-QoS is also supported for mobile devices.



Comparison of communication quality with congested network connection



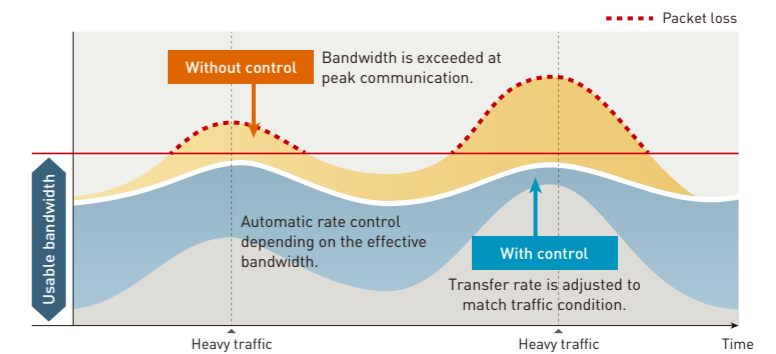
Frequent image and sound disruptions

Minimum image and sound disruptions

AV-QoS - Panasonic original rate control technology

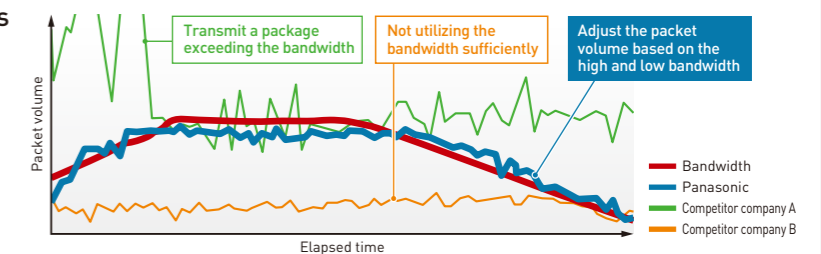
How AV-QoS works

The rate control accurately estimates the congestion of the network and controls the amount of data to be transferred to prevent packet losses. It suppresses image disruptions and audio interruptions even when using an Internet connection whose available bandwidth fluctuates depending on network traffic.



High followability during bandwidth variations

The HDVC System finely controls the package volume based on constantly changing bandwidths for network bandwidth fluctuation of user traffic with the rate control, and continuously follows up in accordance with bandwidth variations. By suppressing the generation of packet losses, a stable connection environment can be achieved.



* The diagram is a conceptual diagram that depicts the changes of the packet in an easy to understand manner.

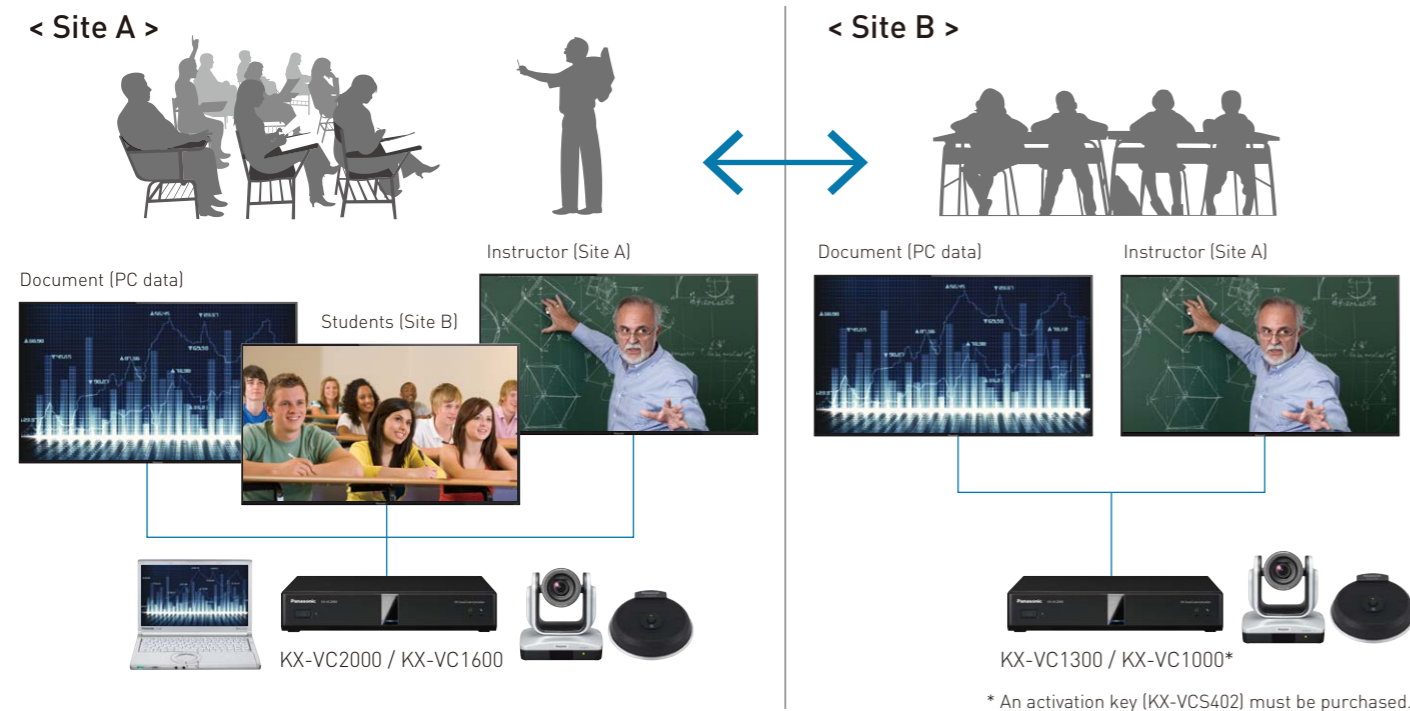
Easy to Use / Manage

Triple Monitor (KX-VC2000 / KX-VC1600)

Accurate communication of information

The HDVC System supports H.239/BFCP dual streaming to simultaneously transmit the home location image and a PC document image and to simultaneously receive the image of a distant site and a PC document image. The KX-VC2000 / KX-VC1600 features a Triple Monitor function*, which can display a PC document, the image of a distant site and the image of the home location separately on three monitors. Display of a PC document on a large screen facilitates understanding and provides effective visual communication.

* The KX-VC1300 / KX-VC1000 supports Dual Monitor. For KX-VC1000, an Activation Key (KX-VCS402) is necessary to use 2 monitors.

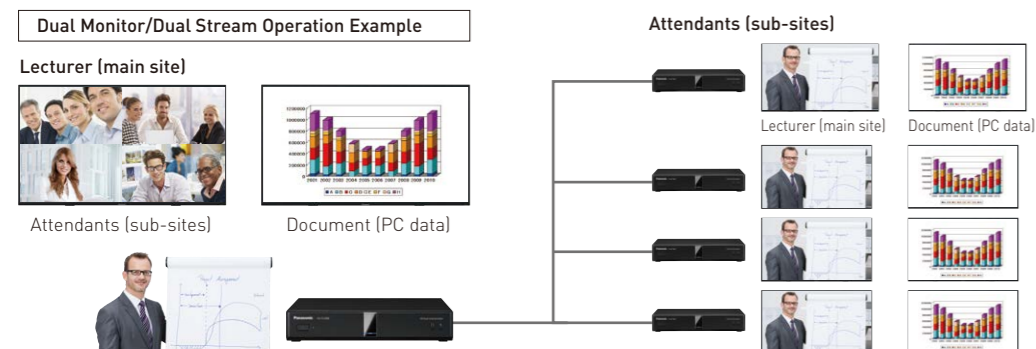


Easy-to-understand remote lectures and seminars are conducted at multiple sites

The lecturer can proceed with the lecture while watching the conditions of the people attending at multiple sites, and the attendants can display reference materials and the image of the lecturer on separate screens. The easy-to-see screens make it easier to understand the content of the lecture.

■ Presentation Mode

This mode is suited to lectures where the main site displays composite images of the sub-sites, and the sub-sites display only the main site image.



Camera Control

Intuitive operation

The remote controller of the HDVC System lets you control the pan, tilt, zoom operations and camera settings* of dedicated cameras mounted at your office and a distant site. A PC and sub camera can be easily switched with a single press of the button. The remote controller features a user-friendly button layout just like that on a TV remote controller, thus allowing intuitive operation.

Pan

HD Communication Camera lens rotates in horizontal direction.
Applicable model: ±130° in KX-VD170/ ±100° in GP-VD131

Tilt

HD Communication Camera lens rotates in vertical direction.
Applicable model: +90°/-25° in KX-VD170/ ±20° in GP-VD131

Zoom

Optical zoom enlarges images up to 12 times.
Applicable model: KX-VD170 (3x optical zoom in GP-VD131)

HDVC Main Unit

HDVC main unit can also be operated through remote controller.

* Examples of camera settings: Brightness, White Balance, Focus, Backlight, Flicker, Digital Zoom.

Automatically control the power supply

In addition to operating the power button of the main unit and remote controller operation, the HDVC System power can be automatically turned ON or OFF with the settings of the HDVC System. Automatic operation makes possible by turning the power OFF during the night or turning the power ON during weekdays. It is also possible to externally control the unit through the serial interface (RS-232C terminal).

■ Operation example

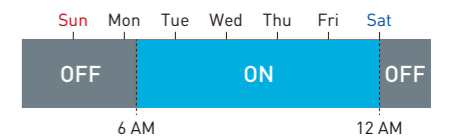
1. Working hours mode

This setting automatically turns the power ON at 9 AM every morning, and automatically turns the power OFF at 7 PM every night.



2. Weekday mode

This setting automatically turns the power ON at 6 AM every Monday, and automatically turns the power OFF at midnight every Saturday.

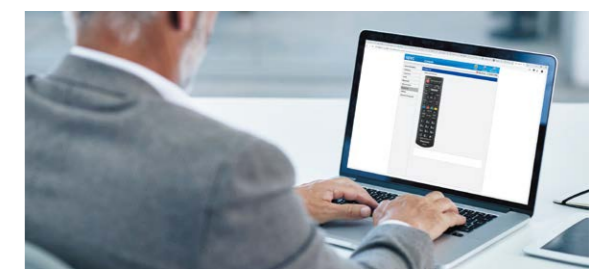


Web Console

Control and operation of the HDVC System from a remote location

Operations manager can control and operate the HDVC System via the Web Console without remote controller.

* The Web Console is a function intended for installers and operations managers.
* Examples of menu: System information display, Virtual remote controller, Edit contact list, Outgoing call and End call



Easy to Use / Manage

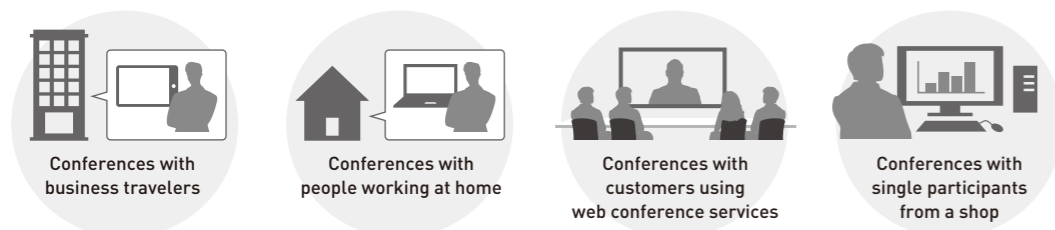
Web Hybrid Mode

Integrating Web Conference and Video Conference NEW

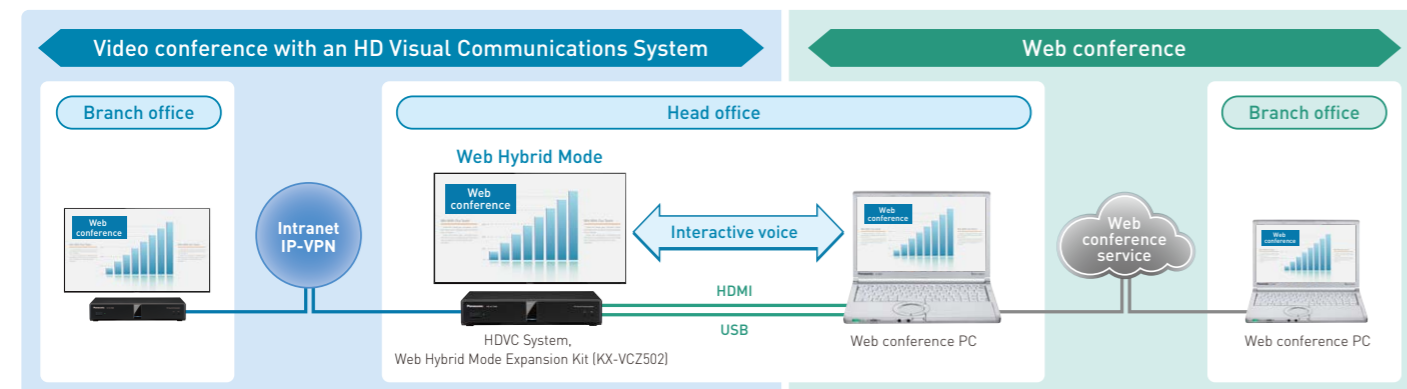
By adding Web Hybrid Mode Expansion Kit* onto Visual Communications System (HDVC), audio and video / contents from Web conference group can be shared with HDVC group. This feature helps you to connect with people who are on the business trip or working at home. In addition, Web conference group will hear HDVC group audio and can join as audio conference.

* Web Hybrid Mode Expansion Kit (KX-VCZ502) is required for the HDVC System. Refer to the Activation Key information on page 17.

Usage Situations



Operating Examples: An operating image using a web conference PC at the head office while sharing web conference materials



USB Device Mode

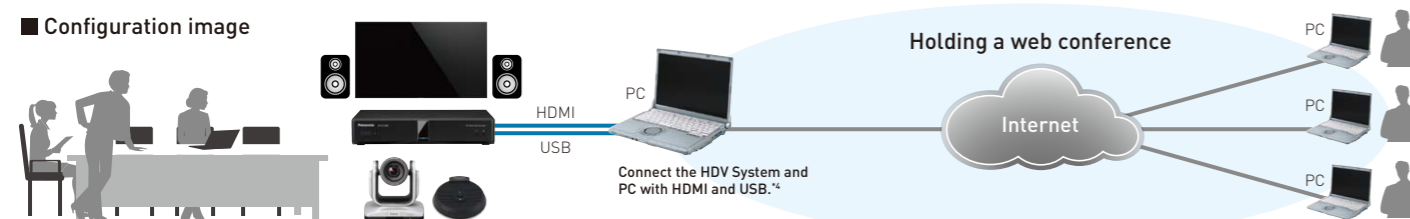
Web conferences become comfortable with the peripherals of HDVC unit

The HDVC System can be used as the camera/microphone USB device*1 connected to the web conference PC to enable high-definition web conferences.*2 Because the HDVC speaker and display can also be used, the system is ideal for web conferences with a number of participants.

Select a video conference or web conference depending on the parties being connected, the number of connection points, and the locations. Since it is not only a specified web conference, the range is not limited.



Configuration image

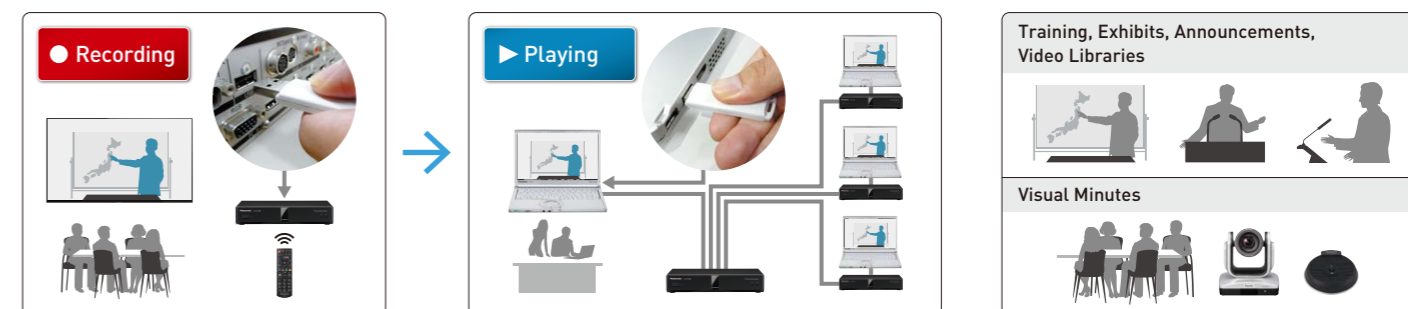


*1 The image quality and audio quality vary depending on the Internet connection condition. *2 PC Peripheral Kit (KX-VCZ501) is required for the HDVC System. Refer to the Activation Key information on page 17. *3 For information on external speakers, refer to the section on "Using the System with Optimal Sound Quality" on page 17. *4 The HDVC System and PC can be connected with the PC Peripheral Kit (KX-VCZ501), the enclosed dedicated USB Conversion Cable (30 cm), or a commercially available USB cable (Type A-B).

USB Recording

Simply recording videoconferences

Videoconferences can be recorded onto a USB memory stick connected to the HDVC System. In addition to recording a remote site, you can record images and sounds from your own site and easily start recording using the remote control. The recorded data can be played back on a personal computer, and can be easily shared among multiple sites via the HDVC System. Recording is also possible without holding a videoconference with a remote site. It can be used as visual minutes of meeting.



Specifications

Image	Recording Format	H.264 High Profile
	Resolution	720p (fixed), Max. 30 frames/second
	Video Rate	Approx. 512 kbps: LP mode/Approx. 1 Mbps: Standard mode (initial value)/Approx. 2 Mbps: High-quality image mode
Audio		MPEG-4 AAC-LC, 64 kbps (Monaural)
Files	Format	mp4 Version 1.0 (Playable by Windows Media Player)
	Size	1 File: Max. 4 hours (LP mode/Standard mode), Max. 2 hours (High-quality image mode) (Capacity guideline 512 kbps: Approx. 1.1 GB, 1 Mbps/2 Mbps: Approx. 2 GB) *After the maximum time has elapsed, recording will continue onto a separate file.
	Filename	vc_start date (year, month, day)_start time (hour, minute, second).mp4 (saving destination: route folder)
USB Memory		USB2.0 supported (USB3.0 recommended), SD Card Class 10 standard equivalent or higher writing speed FAT32 Format

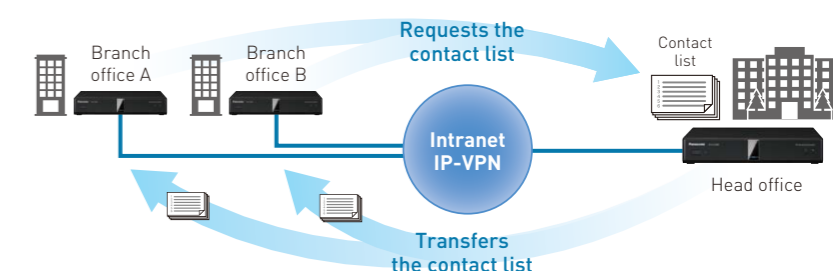
Contact List Transfer

Centrally manage the contact list

The HDVC System contact list of a specific site can be transferred to the HDVC System of another site through the network. This makes it possible to centrally manage the contact list of the HDVC System and improves the efficiency of operational management.

* This function is available when using an Intranet/VPN.
The updating of the contact list is not an incremental update, and consists of overwriting all contacts.

Example: When a branch office uses the head office's contact list.



Whitelist

Whitelist for rejecting unexpected malicious calls (Compatible modes: IP mode (SIP, H.323), NAT Traversal mode.)

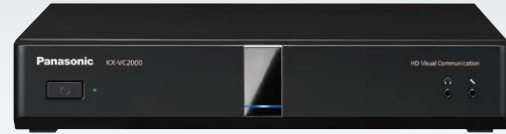
For information security purposes, in addition to encryption during videoconference calls, HDVC can protect against unexpected incoming access, such as wrong number calls or especially malicious calls. By utilizing a contact list and HDVC identification as a whitelist, HDVC can be set to accept calls only from those listed in its contact list or from Panasonic videoconference units with HDVC identification.*1 In other words, any access from people who are not registered on the contact list or who are calling from non-HDVC units will be blocked.

*1 The call permission function is not available for HDVC Mobile, since the HDVC Mobile does not support outgoing calls with an authentication number in global IP format.

Product Line-up

KX-VC2000

- * Remote controller included.
- * HD Communication Omnidirectional Boundary Microphone and HDMI cable sold separately.



- 24-Site*¹ Connection
- Full-HD 1080/60p
- AV-QoS Control
- Wideband Stereo Full Duplex Audio
- Multi Device
- Triple Monitor
- Dual Camera (Sub Camera)
- PC Contents Sharing
- Dual Network
- Web Hybrid Mode
- USB Device Mode
- Multicast*²

*¹ An activation key (KX-VCS305) is required. [Refer to "Activation Key" on page 17.]
 *² An activation key (KX-VCS302) is required. [Refer to "Activation Key" on page 17.]

KX-VC1600

- * Remote controller included.
- * HD Communication Camera, Omnidirectional Boundary Microphone and HDMI cable sold separately.



- 10-Site*¹ Connection
- Full-HD 1080/60p
- AV-QoS Control
- Wideband Stereo Full Duplex Audio
- Multi Device
- Triple Monitor
- Dual Camera (Sub Camera)
- PC Contents Sharing
- Dual Network
- Web Hybrid Mode
- USB Device Mode
- Multicast*²

*¹ An activation key (KX-VCS304) is required. [Refer to "Activation Key" on page 17.]
 *² An activation key (KX-VCS302) is required. [Refer to "Activation Key" on page 17.]

KX-VC1300

- * Remote controller included.
- * HD Communication Camera, Omnidirectional Boundary Microphone and HDMI cable sold separately.



- 4-Site Connection
- Full-HD 1080/60p
- AV-QoS Control
- Wideband Stereo Full Duplex Audio
- Multi Device
- Dual Monitor
- Dual Camera (Sub Camera)
- PC Contents Sharing
- Web Hybrid Mode
- USB Device Mode
- Multicast*¹

*¹ An activation key (KX-VCS302) is required. [Refer to "Activation Key" on page 17.]

KX-VC1000

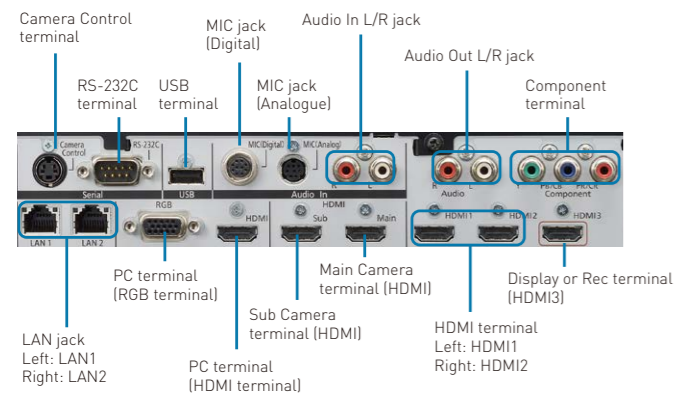
- * Remote controller included.
- * HD Communication Camera, Omnidirectional Boundary Microphone and HDMI cable sold separately.



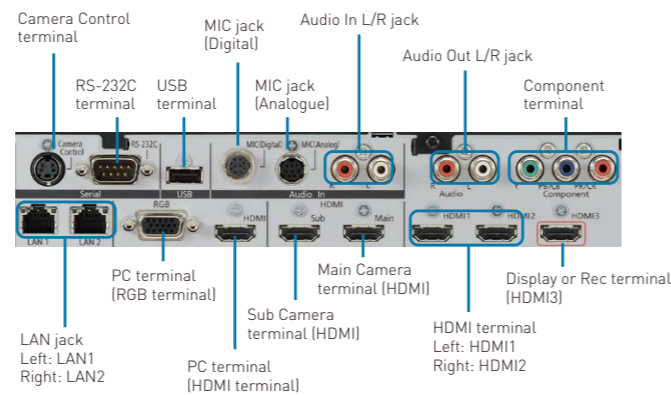
- Point to Point*¹ Connection
- Full-HD 1080/60p
- AV-QoS Control
- Wideband Stereo Full Duplex Audio
- Multi Device
- Dual Monitor*²
- Dual Camera (Sub Camera)
- PC Contents Sharing
- Web Hybrid Mode
- USB Device Mode
- Multicast*³

*¹ An activation key (KX-VCS314) is required. [Refer to "Activation Key" on page 17.]
 *² An activation key (KX-VCS402) is required.
 *³ An activation key (KX-VCS302) is required. [Refer to "Activation Key" on page 17.]

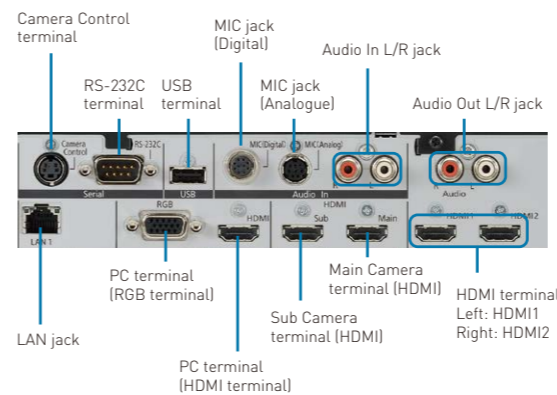
[Rear Panel View]



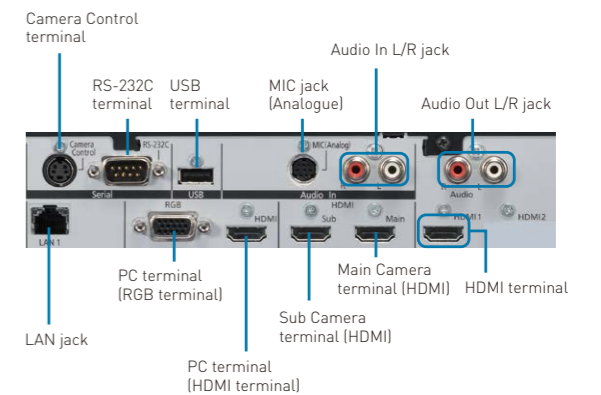
[Rear Panel View]



[Rear Panel View]



[Rear Panel View]



Function Comparison List

	Maximum Conference Sites	Image Resolution	Monitor	Other-brand Device Connection* ¹	MCU Interoperability* ²	PC Contents Sharing	Omnidirectional Boundary Microphone (KX-VCA001)	Omnidirectional Boundary Microphone (KX-VCA002)
KV-VC2000	16* ³	Full HD 1080/60p	3	Yes	Yes	Yes	Yes (1-4 unit)	Yes (1 unit)
KX-VC1600	6* ⁴	Full HD 1080/60p	3	Yes	Yes	Yes	Yes (1-4 unit)	Yes (1 unit)
KX-VC1300	4	Full HD 1080/60p	2	Yes	Yes	Yes	Yes (1-4 unit)	Yes (1 unit)
KV-VC1000	Point to Point* ⁵	Full HD 1080/60p	2* ⁶	Yes	Yes	Yes	No	Yes (1 unit)

*¹ Please ask your nearest dealer about other-brand devices that can be connected.
 *² Please ask your nearest dealer about MCUs that can be connected.
 *³ The optional Activation Key (KX-VCS305) lets you expand the KX-VC2000's maximum conference sites to up to 24 locations. [Refer to "Activation Key" on page 17.]
 *⁴ The optional Activation Key (KX-VCS304) lets you expand the KX-VC1600's maximum conference sites to up to 10 locations. [Refer to "Activation Key" on page 17.]
 *⁵ The optional Activation Key (KX-VCS314) expands the function to enable 4-site connection. [Refer to "Activation Key" on page 17.]
 *⁶ An activation key (KX-VCS402) must be purchased. [Refer to "Activation Key" on page 17.]

Options

HD Communication Camera

KX-VD170 Full-HD

- (HDMI cable sold separately)
- 12x optical zoom/10x digital zoom
 - Pan/tilt function
 - Presets positions: 12
 - Operation through remote controller



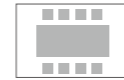
[10 to 80 m²]



*Requires Ceiling Mount Bracket (KX-VC170) sold separately.

GP-VD131 Full-HD

- (HDMI cable sold separately)
- 3x optical zoom/4x digital zoom
 - Pan/tilt function
 - Presets positions: 12
 - Operation through remote controller



[10 to 40 m²]



Omnidirectional Boundary Microphone

KX-VCA001

- (Cable approx. 8.5 m) included
- A high-grade microphone with a direction recognition function that detects the direction of the speaker's voice



KX-VCA002

- (Cable approx. 7 m) included
- A compact, economical and high-grade stereo microphone



* Make sure that the microphone is placed with its connector facing the display.

Extension Cable for the KX-VCA001

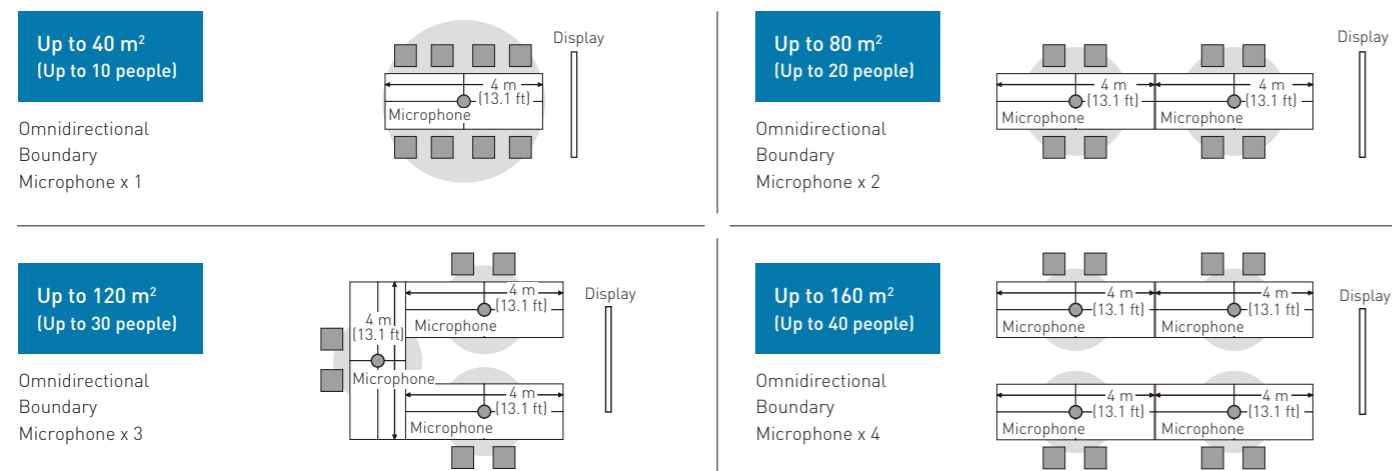
KX-VCAEX01

- For use in setting up the HDVC System in a place where the cable provided with the KX-VCA001 cannot reach.
- Connect the extension cable directly to the HDVC System. Connection is not possible with the cable that comes included with KX-VCA001.
- Length 20 m



Allows flexible system setup according to the number of connection sites and the size of room.
(Omnidirectional Boundary Microphone KX-VCA001)

< Sound collecting ranges of microphones >



* This diagram is intended only as a layout example. It is not meant to show the maximum number of people that can be covered.
* This is the pick-up capacity when using the Omnidirectional Boundary Microphone. The capacity varies when using another microphone.

Activation Key

For HD Visual Communications Unit

Model No.	Product Name	Target Model	Detail
KX-VCS302	Multicast	KX-VC2000 / KX-VC1600 / KX-VC1300 / KX-VC1000	Enables the multicast (one-way transmission) feature.
KX-VCS305	4 Point Built-in MCU for KX-VC2000	KX-VC2000	Enables the feature for making multiple-party video conference calls with 24 parties, rather than the default maximum of 16 parties.
KX-VCS304	4 Point Built-in MCU for KX-VC1600	KX-VC1600	Enables the feature for making multiple-party video conference calls with 10 parties, rather than the default maximum of 6 parties.
KX-VCS314	4 Point Built-in MCU for KX-VC1000	KX-VC1000	Can establish connections with a maximum of 4 parties.
KX-VCS352	Mobile Connection for KX-VC2000	KX-VC2000	Connects to a mobile device in IP Mode.
KX-VCS351	Mobile Connection	KX-VC1600 / KX-VC1300 / KX-VC1000	Connects to a mobile device in IP Mode.
KX-VCS402	HDMI for KX-VC1000 Dual Monitor	KX-VC1000	Enables HDMI2 output. (HDMI Dual Monitor)
KX-VCZ501	PC Peripheral kit	KX-VC2000 / KX-VC1600 / KX-VC1300 / KX-VC1000	Enables the USB Device Mode feature.
KX-VCZ502	Web Hybrid Mode Expansion kit	KX-VC2000 / KX-VC1600 / KX-VC1300 / KX-VC1000	Enables the Web Hybrid Mode feature.

For NAT Traversal Service

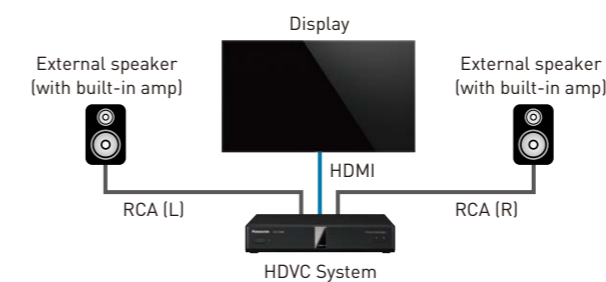
Model No.	Type	Detail
KX-VCS701 KX-VCS703	For the HD Visual Communications System	NAT Traversal Service Activation Key - 1 Year NAT Traversal Service Activation Key - 3 Years
KX-VCS781 KX-VCS783	For a Windows Terminal	Mobile Activation Key - 1 Year for Windows Mobile Activation Key - 3 Years for Windows
KX-VCS751X KX-VCS753X KX-VCS711W KX-VCS713W	For an Android™ and an iOS Terminal	5 Mobile Activation Keys - 1 Year (5 keys) 5 Mobile Activation Keys - 3 Years (5 keys) Mobile Activation Key - 1 Year Mobile Activation Key - 3 Years

For appropriate sound quality

The other party's voice might be difficult to hear depending on the room conditions, built-in speaker of display. In order to utilize videoconference with good sound, it is recommended to use external speakers.

For details, please contact your dealer.

Connection example*



* The wiring varies depending on the type of external speakers.

Display Stand Installation Examples



Specifications

KX-VC2000 / KX-VC1600 / KX-VC1300 / KX-VC1000

Main Unit	KX-VC2000	KX-VC1600	KX-VC1300	KX-VC1000
Terminal Method	SIP, H.323		SIP, H.323	
Image Compression Method	H.261 (mainstream only), H.263, H.263+, H.263++ (reception only), H.264 High Profile, H.264 Baseline Profile		H.261 (mainstream only), H.263, H.263+, H.263++ (reception only), H.264 High Profile, H.264 Baseline Profile	
Audio Compression Method	G.711 μ -law, A-law (3.4 kHz@64 kbps) G.722 (7.0 kHz@64 kbps) G.722.1 (7.0 kHz@32 kbps) G.722.1 Annex C (14.0 kHz@48 kbps/24 kbps) MPEG-4 AAC-LD Mono (7.0 kHz@32 kbps, 14.0 kHz@64 kbps, 22.0 kHz@96 kbps) MPEG-4 AAC-LD Stereo (14.0 kHz@64 kbps, 22.0 kHz@96 kbps)		G.711 μ -law, A-law (3.4 kHz@64 kbps) G.722 (7.0 kHz@64 kbps) G.722.1 (7.0 kHz@32 kbps) G.722.1 Annex C (14.0 kHz@48 kbps/24 kbps) MPEG-4 AAC-LD Mono (7.0 kHz@32 kbps, 14.0 kHz@64 kbps, 22.0 kHz@96 kbps) MPEG-4 AAC-LD Stereo (14.0 kHz@64 kbps, 22.0 kHz@96 kbps)	
No. of Channels	G.711/G.722/G.722.1/G.722.1 Annex C: 1 MPEG-4 AAC-LD Mono: 1/ MPEG-4 AAC-LD Stereo: 2		G.711/G.722/G.722.1/G.722.1 Annex C: 1 MPEG-4 AAC-LD Mono: 1/ MPEG-4 AAC-LD Stereo: 2	
Remote Camera Control	H.224, H.281 [Zoom/Pan/Tilt/Preset]		H.224, H.281 [Zoom/Pan/Tilt/Preset]	
Dual Method	H.239 (H.323), BFCP (SIP)		H.239 (H.323), BFCP (SIP)	
Stream Multi-Monitor	3 Monitors		2 Monitors	1 display (Expandable to 2 displays)
No. of Applicable Resolution Frames	Main: Max. 1080p 30 frames/second, Sub: Max. 1080p 30 frames/second		Main: Max. 1080p 30 frames/second, Sub: Max. 1080p 30 frames/second	
Encryption	SRTP (AES 128 bit), H.235 (AES 128 bit)		SRTP (AES 128 bit), H.235 (AES 128 bit)	
Other	H.460.18, H.460.19		H.460.18, H.460.19	
Communication Bandwidth	256 kbps to 24 Mbps	256 kbps to 18 Mbps	256 kbps to 18 Mbps	
Video Compatible Resolutions*1	176 x 144p, 352 x 240p, 352 x 288p, 512 x 288p, 640 x 480p, 704 x 480p, 704 x 576p, 768 x 432p, 800 x 600p 1024 x 768p, 1280 x 720p, 1280 x 768p, 1280 x 800p, 1920 x 1080p	176 x 144p, 352 x 240p, 352 x 288p, 512 x 288p, 640 x 480p, 704 x 480p, 704 x 576p, 768 x 432p, 800 x 600p 1024 x 768p, 1280 x 720p, 1280 x 768p, 1280 x 800p, 1920 x 1080p	176 x 144p, 352 x 240p, 352 x 288p, 512 x 288p, 640 x 480p, 704 x 480p, 704 x 576p, 768 x 432p, 800 x 600p 1024 x 768p, 1280 x 720p, 1280 x 768p, 1280 x 800p, 1920 x 1080p	
No. of Frames	Max. 60 frames/second (for H.264 1080p)		Max. 60 frames/second (for H.264 1080p)	
Screen Display	Full-screen, PinP, PwIP, Side by Side		Full-screen, PinP, PwIP, Side by Side	
Audio	Echo canceller, Auto gain control, Stationary noise reduction, Lip synch, Equalizer, Mic mute		Echo canceller, Auto gain control, Stationary noise reduction, Lip synch, Equalizer, Mic mute	
I/O Terminals	HDMI main x 1, HDMI sub x 1 Input compatible resolution: 1280 x 720p, 1920 x 1080i, 1920 x 1080p RGB x 1 (Mini D-sub 15pin), HDMI x 1*2 Input compatible resolution: VGA, SVGA, XGA, HD, WXGA, SXGA, FWXGA, WXGA+, UXGA, WSXGA+, Full-HD		HDMI main x 1, HDMI sub x 1 Input compatible resolution: 1280 x 720p, 1920 x 1080i, 1920 x 1080p RGB x 1 (Mini D-sub 15pin), HDMI x 1*2 Input compatible resolution: VGA, SVGA, XGA, HD, WXGA, SXGA, FWXGA, WXGA+, UXGA, WSXGA+, Full-HD	
Video Output	HDMI x 2, HDMI x 1 (For own site/recording video) RCA x 1 (Component) Supported output resolutions: 1920 x 1080i, 1920 x 1080p		HDMI x 2 Supported output resolutions: 1920 x 1080i, 1920 x 1080p	
Audio Input	Omnidirectional Boundary Microphone (Digital Interface Type) x 1 (KX-VCA001), Max. 4; Omnidirectional Boundary Microphone (Analogue Interface Type) x 1 (KX-VCA002), Max. 1 HDMI, Stereo mini-plug*3*4 x 1 (ø3.5 mm) RCA*5 (Stereo) x 1		Omnidirectional Boundary Microphone (Digital Interface Type) x 1 (KX-VCA001), Max. 4; Omnidirectional Boundary Microphone (Analogue Interface Type) x 1 (KX-VCA002), Max. 1 HDMI, Stereo mini-plug*3*4 x 1 (ø3.5 mm) RCA*5 (Stereo) x 1	
Audio Output	HDMI*6, Stereo mini-plug*3*7 x 1 (ø3.5 mm), RCA*8 x 1 (Stereo)		HDMI*6, Stereo mini-plug*3*7 x 1 (ø3.5 mm), RCA*8 x 1 (Stereo)	
Network	RJ45 x 2 (1000BASE-T/100BASE-TX Full Duplex)	RJ45 x 2 (100BASE-TX Full Duplex)	RJ45 x 1 (100BASE-TX Full Duplex)	
External Control	RS-232C x 1 (Also used for maintenance)		RS-232C x 1 (Also used for maintenance)	
Others	USB 2.0*9 x 1 (Host Mode, Device Mode), Camera Control Terminal x 1 (Not used)		USB 2.0*9 x 1 (Host Mode, Device Mode), Camera Control Terminal x 1 (Not used)	
No. of Simultaneous Connection Sites	16 (Expandable up to 24)	6 (Expandable up to 10)	4	Point to point (Expandable up to 4)
Content Sharing	PC (RGB/HDMI), Sub-camera (HDMI sub)		PC (RGB/HDMI), Sub-camera (HDMI sub)	
USB Host Mode (USB Memory Device)	Updating Software, Recording, Import (Contact List/Profile*10/Configuration Data/Encryption Data/Startup screen/Multicast Tree List), Export (Contact List/Profile*10/Configuration Data/Encryption Data/Multicast Tree List)		Updating Software, Recording, Import (Contact List/Profile*10/Configuration Data/Encryption Data/Startup screen/Multicast Tree List), Export (Contact List/Profile*10/Configuration Data/Encryption Data/Multicast Tree List)	
USB Device Mode	USB Video Class: Version 1.0 USB Audio Class: Version 1.0		USB Video Class: Version 1.0 USB Audio Class: Version 1.0	
WEB Hybrid Mode	USB Audio Class 1.0		USB Audio Class 1.0	
Network Protocol	TCP/IPv4, TCP/IPv6*11, UDP/IPv4, UDP/IPv6*11, DHCP, DNS, HTTP, HTTPS, TELNET, NTP		TCP/IPv4, TCP/IPv6*11, UDP/IPv4, UDP/IPv6*11, DHCP, DNS, HTTP, HTTPS, TELNET, NTP	
Network Functions	Automatic Repeat Query (ARQ), Forward Error Correction (FEC), Adaptive Rate Control (ARC), Reorder, Packet Shaping, Arbitrary Port Setting, NAT Compatibility, Encryption, IP Precedence/DiffServ Support		Automatic Repeat Query (ARQ), Forward Error Correction (FEC), Adaptive Rate Control (ARC), Reorder, Packet Shaping, Arbitrary Port Setting, NAT Compatibility, Encryption, IP Precedence/DiffServ Support	
External Control	Via Web Browser, Control by HTTP CGI, TELNET, RS-232C		Via Web Browser, Control by HTTP CGI, TELNET, RS-232C	
Connection Modes	IP mode, NAT Traversal mode, IP mode / NAT Traversal mode		IP mode, NAT Traversal mode, IP mode / NAT Traversal mode	
Dimensions (width x depth x height) (excluding projecting parts)	Approx. 320 mm x approx. 270 mm x approx. 61 mm	Approx. 320 mm x approx. 230 mm x approx. 61 mm	Approx. 320 mm x approx. 230 mm x approx. 61 mm	
Weight	Approx. 3.4 kg (approx. 7.5 lb)	Approx. 2.0 kg (approx. 4.4 lb)	Approx. 2.0 kg (approx. 4.4 lb)	
Power Input	AC 100-240 V, -1.0 A, 50/60 Hz	AC 100-240 V, -1.4A, 50/60 Hz	AC 100-240 V, -1.4A, 50/60 Hz	
Power Consumption	Max.: approx. 73 W, Standby: 0.6 W	Max.: approx. 45 W, Standby: 0.6 W	Max.: approx. 43 W, Standby: 0.6 W	Max.: approx. 37 W, Standby: 0.6 W
DC Power Input	DC 24 V, 3.0 A		DC 24 V, 2.5 A	
Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)		0 °C to 40 °C (32 °F to 104 °F)	
Operating Humidity	10 % to 90 % (non-condensing)		10 % to 90 % (non-condensing)	
Language	English, German, French, Italian, Spanish, Dutch, Portuguese, Japanese, Russian, Chinese, Arabic		English, German, French, Italian, Spanish, Dutch, Portuguese, Japanese, Russian, Chinese, Arabic	

*When connected to a different brand's device or MCU (Multi-point Control Unit), connection conditions vary depending on the specifications of their devices or MCUs.

*1 Varies according to device settings and the status of the network. *2 HDCP is not supported. *3 For 3-conductor stereo mini-plugs only.

*4 Unbalanced, input impedance: approx. 2.3 k Ω (with a bias of approx. DC 3 V) *5 Unbalanced, recommended input value: -16 dBV, impedance: approx. 100 k Ω

*6 Simultaneous voice audio output for HDMI1/HDMI2 is not supported. *7 Unbalanced, recommended load impedance: 16 Ω *8 Unbalanced, output level: approx. -25 dBV, impedance: approx. 400 k Ω

*9 Power supply capacity: 5 V/500 mA *10 Available for the KX-VC1000 after KX-VCS314 expansion has been enabled. *11 Some features are not supported when using IPv6.

HD Communication Camera

HD Communication Camera	KX-VD170	GP-VD131
Effective Pixels	1920x1080p	1920x1080i, 1920x1080p
Pan / Tilt	Pan: \pm 130°, Tilt: +90° -25°	Pan: \pm 100°, Tilt: \pm 20°
Zoom (optical/digital)	12x / 10x	3x / 4x
Angle of view (optical zoom)	Horizontal angle of view 72.5° [Wide end] - 6.3° [Tele end] Vertical angle of view 44.9° [Wide end] - 3.8° [Tele end] F1.8 [Wide end] - F2.8 [Tele end]	Horizontal angle of view 85° [Wide end] - 30° [Tele end] Vertical angle of view 68.4° [Wide end] - 23.8° [Tele end] F1.2 [Wide end] - F2.0 [Tele end]
Presets	12 positions	
Connection Cable	HDMI	
Dimensions (width x depth x height)	Approx. 180 mm x approx. 145 mm x approx. 184 mm	Approx. 133 mm x approx. 127 mm x approx. 139 mm
Weight	Approx. 1.6 kg	Approx. 0.8 kg
Power Consumption	Power supply voltage: 12 VDC \pm 10% (with AC adaptor attached) Consumption current: 1.2 A	Power supply voltage: 16 VDC \pm 10% (with AC adaptor attached) Consumption current: 0.6 A
Operating Temperature	0 °C to 40 °C	
Operating Humidity	20 % to 90 % (non-condensing)	

*1 With i.Zoom 2x.
*2 i.Zoom function maintains high-definition picture quality.

Omnidirectional Boundary Microphone

Omnidirectional Boundary Microphone	KX-VCA001	KX-VCA002
Maximum Pickup Range	Approx. 4 m (radius)	Approx. 2 m (radius)
Pickup Method	Stereo / Monaural *1	Stereo / Monaural *2
Microphone Unit	Unidirectional ECM microphone parts x 4	Unidirectional ECM microphone parts x 2
Number of Connections	Maximum 4 microphones	Maximum 1 microphone
Maximum Input Sound Pressure	110 dBspl	
Number of Terminals for Microphone Connection	2	1
Dimensions	Approx. 120 mm (diameter) x 27 mm	Approx. 75 mm (diameter) x 31 mm
Cable Length	Approx. 8.5 m	Approx. 7 m
Power Input	Supplied from main unit via proprietary cable	
Weight	Approx. 280 g	Approx. 80 g
Operating Temperature	0 °C to 40 °C	
Operating Humidity	10 % to 90 % (non-condensing)	

*1 If either of the following conditions is met, the output sent to the other party will be stereo; otherwise, monaural:
• The bandwidth is higher than approximately 1.8 Mbps in a 2-party videoconference call with the HDVC Unit using SIP.
• The MIC position is set manually to "Center stereo", or the MIC position is set automatically with the KX-VCA001 connected to the unit without the KX-VCA002 connected.
*2 If either of the following conditions is met, the output sent to the other party will be stereo; otherwise, monaural:
• The bandwidth is higher than approximately 1.8 Mbps in a 2-party videoconference call with the HDVC Unit using SIP.
• KX-VCA001 and KX-VCA002 are not being used together.

USB Device Mode

OS	Windows 7, 8.1, 10*1
USB Port	USB 2.0 or later
Video	Video Format: Motion JPEG Resolution: 640x480: Max. 30 frames/second, 1280x720: Max. 15 frames/second
Audio	Audio Format: PCM/16bits/32kbps

*1 Usable by simply connecting a USB cable to the PC, without having to install a driver.

Web Hybrid Mode

OS	Windows 7, 8.1, 10
USB Port	USB 2.0 or later
Audio	Audio Format: PCM/16bits/32kbps